

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

PROGRESS REPORT ON THE EXPERIMENTAL FOREST INSECT  
CONTROL PROJECT COEUR D'ALENE NATIONAL FOREST

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INTRODUCTION

The primary object of this experiment is to determine the economic possibility of instituting control measures on a yearly maintenance basis, in the white pine stands of northern Idaho, in order to reduce the depredations of the mountain pine beetle to a minimum. For a detailed description of this project reference is made to a preliminary report submitted from this station under date of October 6th, 1924, copies of which are in the files of the Forest Service and Bureau of Entomology. This reference contains a description of the area, the purpose of the project, a history of the infestation, and the cost of the first season's work. This progress report will present the results obtained by the work of 1924, and the cost of the 1925 operation.

CONTROL OPERATIONS OF 1925

Control measures were again instituted in May 1925 and as near as possible a one hundred per cent cleanup of the infestation was made. Actual control work started on the 22nd of May and was completed on the 1st of June. The same method of locating and treating the infested trees as described in the preliminary report was followed. Two men who had secured experience in the work the previous season were secured. The writer spent six days with these men in checking their work and in locating and marking the trees to be treated.

SUMMARY OF THE COSTS OF CONTROL

	1924	1925
Wages		
Cook . . . . .	\$21.00	\$00.00
Laborers, Effective time . . . . .	85.00	63.00
Noneffective time . . . . .	44.00	30.00
Subsistence . . . . .	54.95	24.15
Tools . . . . .		4.50
Packing . . . . .	8.75	18.99
Travel . . . . .	16.16	4.29
Overhead . . . . .	25.00	00.00*
	\$254.89	144.93
	1924	1925
Total volume of white pine treated during project	48,700 B. F.	18,980
Total number of trees treated during project	34	19
Total cost per M.B.F. treated	5.23	7.63
Total cost per tree treated	7.49	7.62
Cost per M.B.F. per effective time of crew	4.33	6.04
Cost per tree per effective time of crew	6.20	6.03
Cost per M.B.F. without subsistence and cook	3.67	6.36
Cost per tree without subsistence and cook	5.26	6.35
Cost per M.B.F. per effective time of crew without subsistence and cook	2.77	4.78
Cost per tree per effective time of crew without subsistence and cook	3.97	4.77
Number of man hours per M.B.F. effective time only	3.4	6.6
Number of man hours per tree, effective time only	5.0	6.6
Cost per acre	0.073	0.041

\*It is believed that in the application of control measures on a yearly basis, the responsibility for the location of the trees to be treated will fall upon the treating crews, which will eliminate overhead charges.

From the above table you will note that the cost of treatment per thousand board feet was considerably higher in 1925 than in 1924. This is

due to the fact that the volume treated in 1925, though only 38% of the amount treated the previous year, was scattered throughout the same area resulting in practically the same amount of nonproductive labor, the cost of which had to be absorbed by a much smaller treated volume than in 1924. On small project and with scattered infestation the cost of treatment will always be higher than for severe epidemics.

#### RESULTS OBTAINED

From 1918 to 1922 the infestation in this area completed a natural cycle. Starting at a low point the infestation increased to an extremely high one in 1920 and returned to the original in 1922. These data point to the fact that approximately four years are required for a complete cycle of the infestation in this area. The 1923 loss showed a 50% increase over the 1922 and corresponded very closely to the 1919. Furthermore from the condition of the broods in the 1923 attacked trees it was very evident that the infestation was again increasing as would be expected if the premise of a four year cycle is accepted. On this assumption one is justified in feeling that if control work had not been instituted, the 1924 loss would have corresponded very closely to the 1920. If that be correct then as a result of the first season's control operation the 1924 attack was reduced from 118,000 to 18,000 which gives an actual saving of 100,000 B.F. Though it is sincerely believed by the writer that this condition would have existed, it is realized that such a statement is of course questionable, and due to the inauguration of control work, is one that cannot now be proved. But if we take the average of the past four years' loss, which was the time required for

the cycle of infestation to be completed, we have the difference between 58,000, the average loss, and 18,000, or a saving of 40,000 B.F. Going still further and taking the difference between the 1923 attack (48,000 B.F.) and the 1924 (18,000 B.F.) which followed the first season's control work, we still show a saving of 30,000 B.F. However, if in arriving at this last figure consideration had been taking of the 20% which was estimated to have been the volume of infestation missed during the control operations we would have the difference between 61,000 and 23,000 or a saving of 38,000 B.F. instead of 30,000 B.F.

To base the determination of the success of control work upon the difference in the amount of infestation immediately before and after one season's operation is very unfair, as the fluctuation of the infestation due to natural conditions must be taken into consideration. It would seem that the only fair method to follow in determining this success would be to compare the average amount of infestation following several years' control work, to the average loss over a previous period of years. If this premise is accepted then a saving of 40,000 B.F. at a cost of \$254.00 was made by the 1924 operation. Should we be obliged to show at least a dollar saved for every dollar spent, a present valuation of \$6.40 would need be placed upon this timber before the first year's control work would be justified. However the 1925 operation cost but \$144.00, so even if no further reduction occurs, which is hardly conceivable, a stumpage value of \$3.60 would justify the expenditure for that season, or an average of \$5.00 for the two years.

It is somewhat difficult to show the monetary value of the first season's work, as no recent appraisal has been made of the Independence Creek

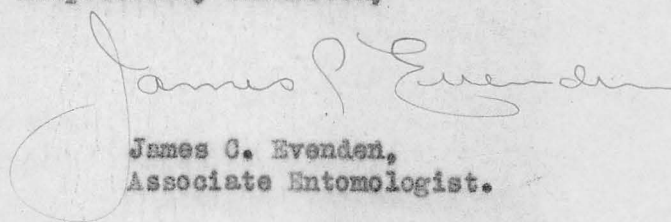
timber. However the timber stands on the East Fork of the Coeur d Alene River, which are but a few miles away with a situation comparable to the Independence Creek area, was recently appraised at \$8.00 per thousand. In this experiment a stumpage price of \$6.40 would seem to justify the first season's work on this project. It would seem hardly fair to place the future of this experiment upon the value of the Independence Creek timber, as it is apparent that the one factor which will determine the economy of forest insect control on the yearly maintenance basis is the stumpage value of the timber in question, which will perhaps vary in every case.

RECOMMENDATIONS FOR FUTURE  
CONTROL

The results obtained by the 1924 operations are indeed very gratifying, and point favorably towards the possibility of economically instituting control measures on a yearly maintenance basis throughout our white pine stands.

It is recommended that this experiment be continued for at least three more years and that \$250.00 be allotted for the work in 1926. This amount which perhaps seems excessive has been requested as it is desired to secure certain entomological data in connection with the coming season's work. It is hoped that these data will have a direct bearing upon the future application of the results of this experiment.

Respectfully submitted,

  
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